Manual de servicio

Split Acondicionador de Aire

Modelo : **DSA-099L**
DSA-129L
DSA-189L

aviso:
En este manual,algunas partes puede cambiar
la lista de partes sin previo aviso.

DAEWOO ELECTRONICS

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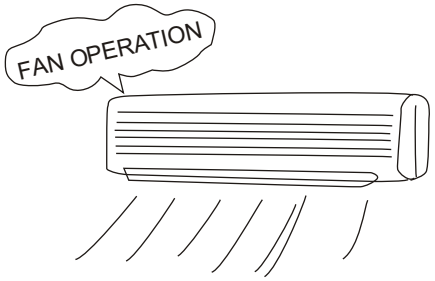
SERVICE AND MAINTENANCE

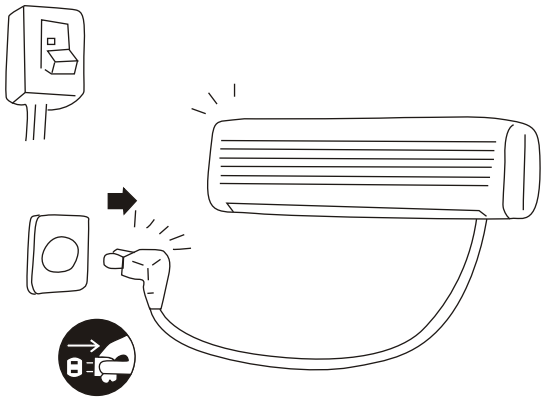
Air Conditioner no use for a long time.

1 Start fan only for 3-4 hours to completely dry the inside of the indoor unit.

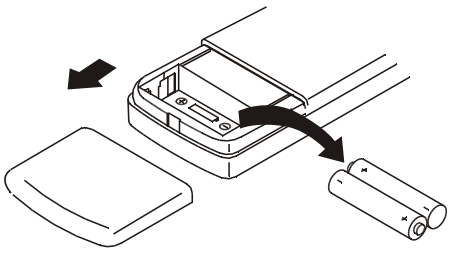
- Set COOL mode or HEAT mode, and select the highest setting temperature, then fan turns.



2 Turn off air conditioner, unplug the power plug. Otherwise, the accumulated dirt may cause fire.



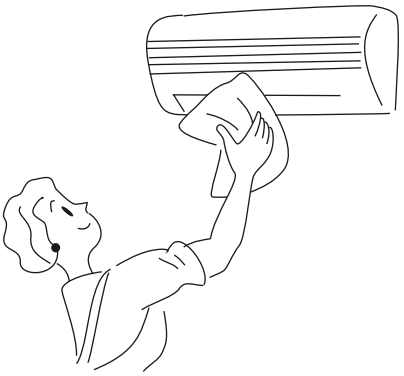
3 Take the batteries out of the remote controller.



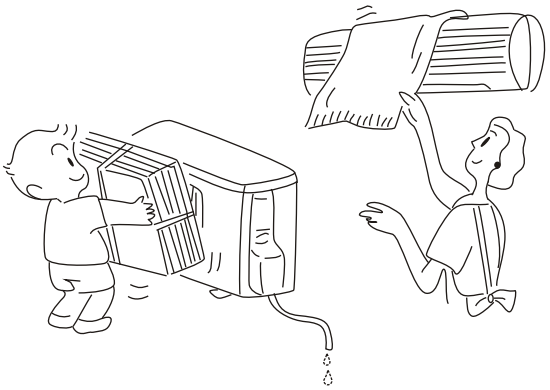
Want to use the Air Conditioner

1 Clean filters and replace them to original position.Clean indoor unit with soft cloth.

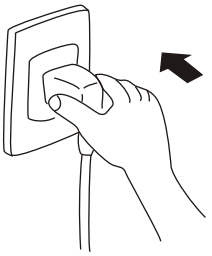
- Do not use gasoline, benzene, thinner, grinding powder, detergent,insecticide etc. to clean units as they can hurt the units.



2 Inlets and outlets of indoor and outdoor units shall not be covered/blocked.



3 Ground wire shall not be loose.
Put in batteries, and plug the power plug.

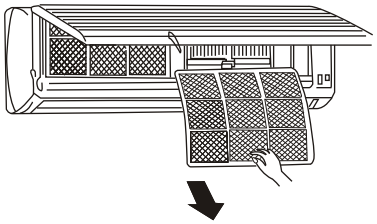


SERVICE AND MAINTENANCE

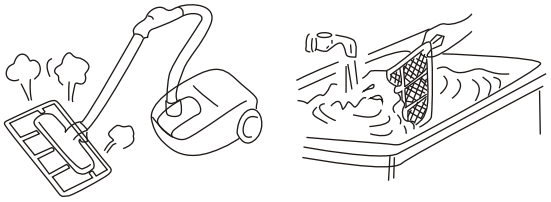
■ **Deodorization filter, Air cleaner, Filters must be cleaned termly. Open front panel only after air conditioner stops completely.**

Filters should be cleaned once every two weeks.

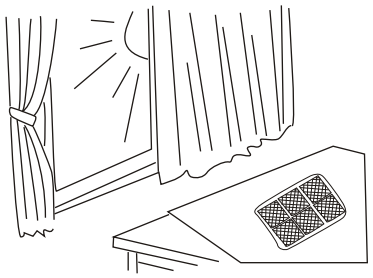
1 Take out filters.



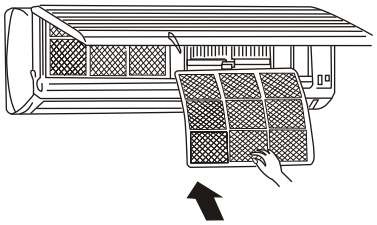
2 Clean filters with a vacuum cleaner or by typing them gently. (If they are very dirty, wash them in warm water below 45°C dissolved with neutral scouring agent.)



3 Clean filters with clean water, then dry them in cool air.

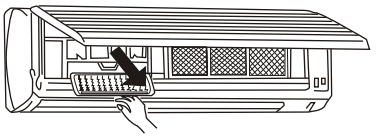


4 Insert them at original position, then push down and close front panel.

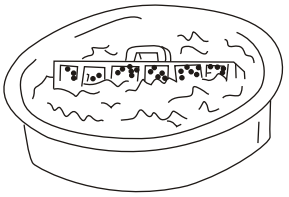


Clean deodorization filters and air cleaner.

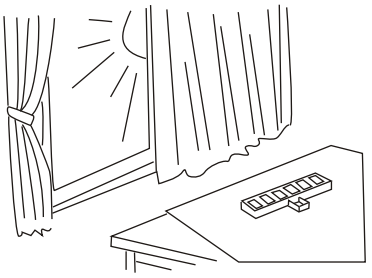
1 Take out filters first, then take out deodorization filter and air cleaner.



2 Clean deodorization filter, air cleaner with warm water below 45 °C dissolved with neutral scouring agent.



3 Clean filters with clean water, then dry them in cool air.



4 Insert them at original position, then push down and close front panel.

CONTROLS SPECIFICATION

1 ABBREVIATION

Ts: Setting Temperature
Tr: Room Temperature
Ti: Indoor defrost sensor temperature
To: Outdoor defrost sensor temperature

2 OPERATION OF MAIN BOARD

■ COOL MODE

- If Tr > Ts, cool operation is activated. Compressor and outdoor fan are turned on. Indoor fan runs at the set speed.
- If Tr ⩽ Ts-1℃ cool operation is terminated. Compressor and outdoor fan are turned off.
- The range of Ts is 16-31℃
- Indoor fan speed can be adjusted for low, medium, high and auto.Compressor will be delayed for 3 minutes before it is turned on or off.

Indoor de-ice

This process is checked by the indoor defrost sensor (Ti). If Ti =2℃, indoor fan increase to high speed, when Ti⩽-1℃ for 1 minute continuously, compressor and outdoor fan are turn off , indoor fan increases to high speed . When Ti⩾8℃ for 5 minutes continuously, compressor and outdoor are turn on.
de-ice operation is on for more than 8 minutes, system will return to normal operation.

■ AUTO CHANGEOVER MODE

- When this mode is selected, the system will change from AUTO COOL to AUTO DRY to AUTO HEAT mode according to the room temperature and will run according to the programmed temperature set points as in the following table.
- If the unit is restarted after it is stopped for less than 2 hours, it will resume at the previously established mode before it was stopped. (i.e. AUTO COOL or AUTO DRY or AUTO HEAT)
- If the unit is restarted after it is stopped for more than 2 hours, it will run in a new mode according to the room temperature when it is restarted.
- During this mode the temperature set point can only be set + or - 2 Deg. C of the room temperature.

Per Room Temperature (RT)	Cooling only type		Heat pump type	
	Mode	PRE-SET Temperature	Mode	PRE-SET Temperature
above 26˚C	Cool	24˚C	Cool	24˚C
25-26˚C		RT-2		RT-2
23-25˚C	Dry	RT-2	Dry	RT-2
below 23˚C			Heat	26˚C

■ FAN MODE

- Indoor fan runs at the set speed while compressor and outdoor fan are turned off.
- Indoor fan speed can be adjusted for low, medium and high.

CONTROLS SPECIFICATION

DRY MODE

- If Tr ⩾ 15℃, dry operation is activated. Compressor and outdoor fan are turned on interval.
- If Tr ⩾ 23℃, Compressor and outdoor fan are operating in sequence as follows: See A of fig1 If Tr<23℃ Compressor and outdoor fan are operating in sequence as follows: see B of FIG1.

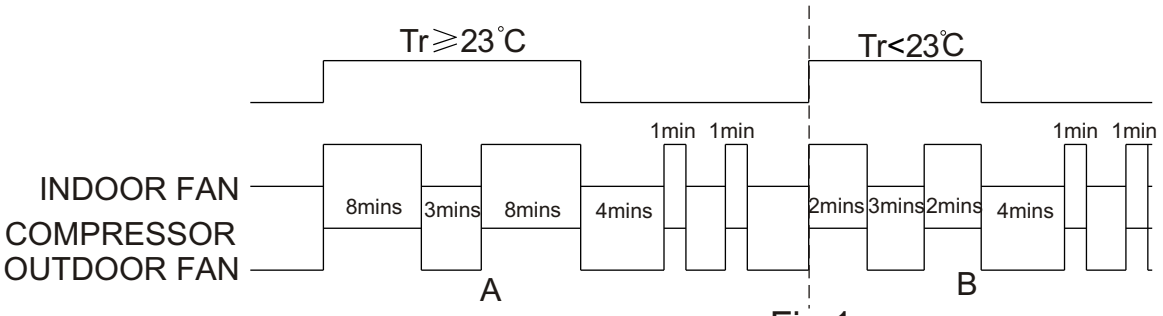


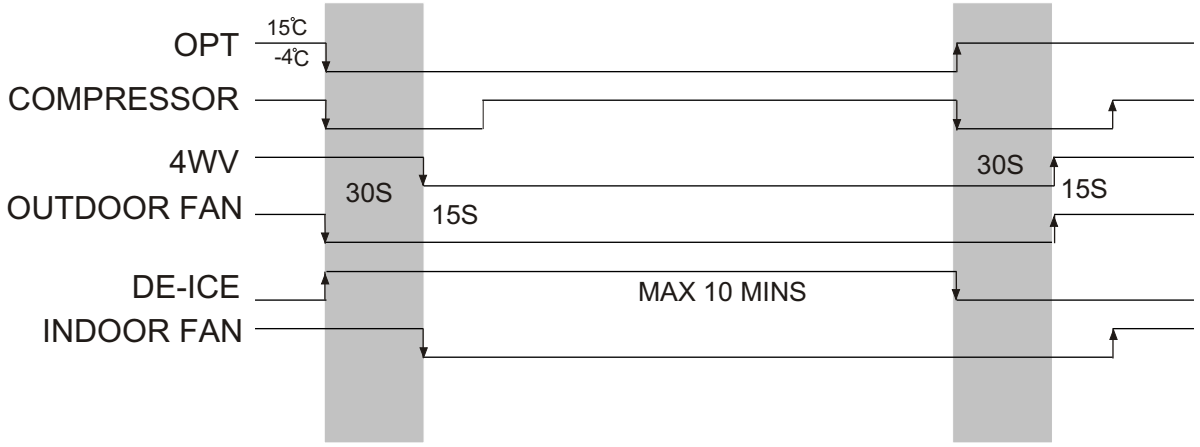
Fig.1

HEAT MODE

- If Tr < Ts, heat operation is activated. Compressor and outdoor fan are turned on.
- Compressor will delay for 3 minutes before it is turned on or off.
- If Tr ⩾ Ts + 1℃, heat operation is terminated. Compressor and outdoor fan are turned off.
- The range of Ts is 16 - 31℃ .
- Indoor fan speed can be adjusted for low, medium, high and auto.
- Compressor will delay for 3 minutes before it is turned on or off.

Outdoor de-ice

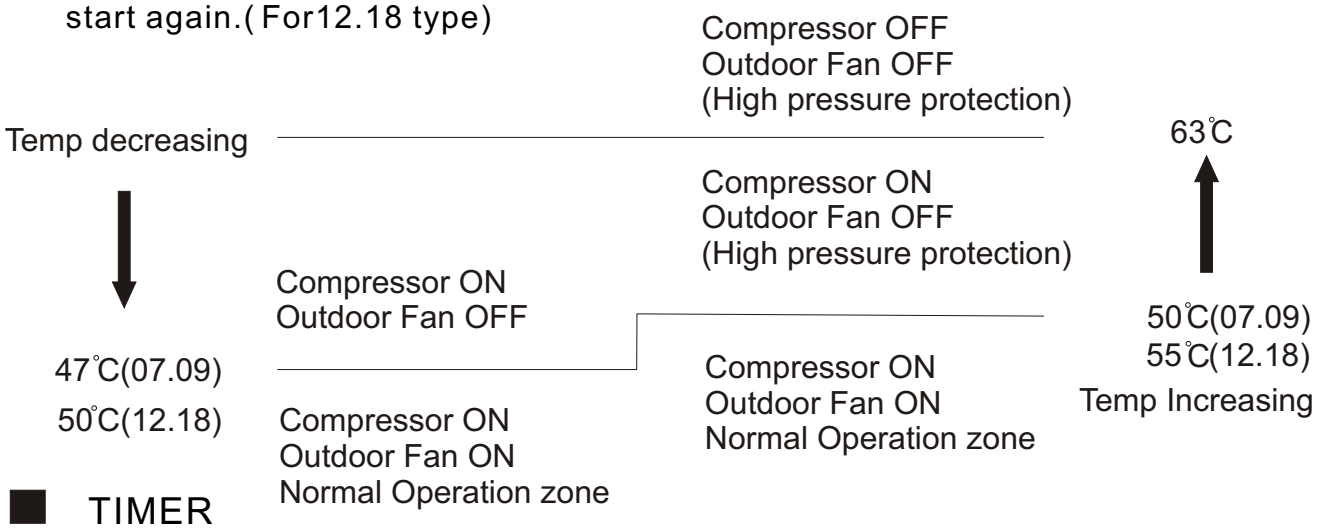
After 40 minutes of continuous heating operation, if To ⩽ -4℃, the outdoor de-ice operation is activated. Compressor is turned off. Indoor fan speed reduces to low speed. After 30 seconds delay, 4 way value and outdoor fan will be turned off, indoor fan reduces to low speed, 15 seconds later, the compressor is turned on and indoor fan turn off for the de-ice operation, if To ⩾ 15℃ or 10 minutes has elapsed, the de-ice operation will be terminated. Then, the compressor is turned off. After 30 seconds delay, 4 way valve and outdoor fan are turned on, 15 seconds later, compressor and outdoor fan are turned on for return to normal operation, indoor fan is turned on for return to normal operation also.



CONTROLS SPECIFICATION

■ HIGH PRESSURE PROTECTION

If Ti > 50℃, the outdoor fan is turned off. After that, if Ti < 47℃ , the system will start again.(For 07.09 type)
If Ti > 55℃, the outdoor fan is turned off. After that, if Ti < 50℃ , the system will start again.(For 12.18 type)
If Ti > 63℃, the compressor is turned off. After that, if Ti < 50℃, the system will start again.(for 07.09 type)
If Ti > 63℃, the compressor is turned off. After that, if Ti < 55℃, the system will start again.(For12.18 type)

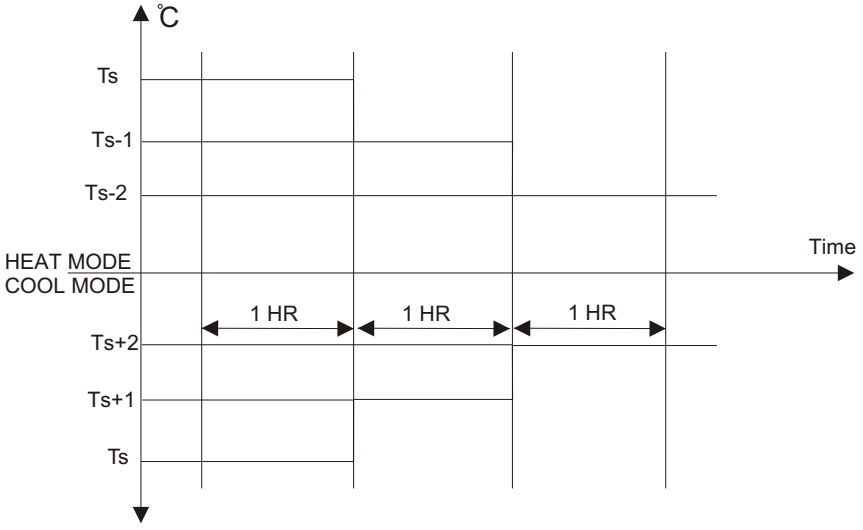


■ TIMER

- Timer off can only be set when the system is operating.
- Timer on can only be set when the system is off.
- The maximum set time is 12 hours.
- Changing of on/off state will cancel timer mode.

■ SLEEP MODE

- In cool mode, after sleep mode is set, Ts will increase 1℃ in first hours, will increase 2℃ in second hours and will operation as the temperature
- In heat mode, after sleep mode is set, Ts will decrease 2℃ in first hours, will increase 2℃ in second hours and will operation as the temperature
- Changing of operation mode will cancel sleep mode.



CONTROLS SPECIFICATION

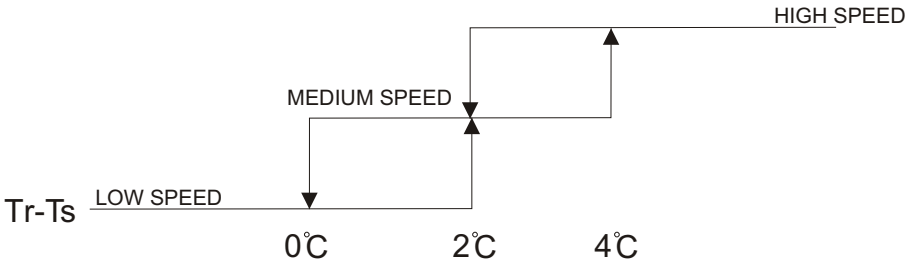
■ AUTO FAN SPEED

In cool mode, if Tr-Ts < 0℃, indoor fan is run at low speed.

If 0℃ <Tr-Ts<2℃ , if indoor fan is running at low speed, there will be no change in speed , if fan is running at medium speed ,there will be no change in speed ,if indoor fan is run at high speed ,it will change to medium speed.

If 2℃ ≤Tr-Ts<4℃ indoor fan keep original speed.

If Tr-Ts≥4℃ indoor fan is run at high speed.

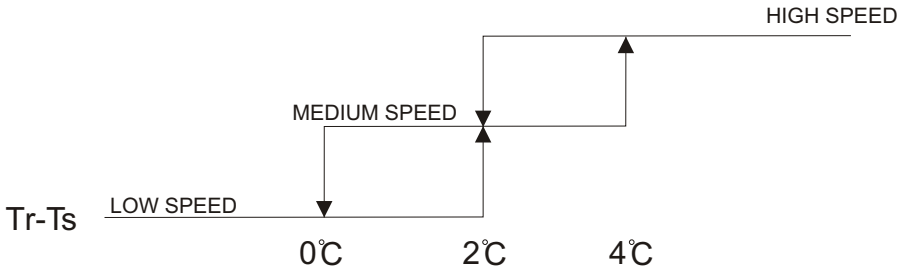


In heat mode, if Tr-Ts ≤ 1℃, indoor fan is run at low speed.

If 1℃ <Tr-Ts<3℃ , if indoor fan is run at low speed, there will be no change in speed , if fan run at medium speed ,there will be no change in speed , if indoor fan is run at high speed ,will change to medium Speed.

If 3℃ ≤Tr-Ts<5℃indoor fan keep original speed.

If Tr-Ts≥5℃ indoor fan is run at high speed.



■ MANUAL SWING (STEPPING MOTOR)

If the indoor fan is operating, the louver will swing or can be stopped at a preferred location in any mode. The louver change location follow the order of :

■ BUZZER

If a command is received, the system will respond with a beep.

CONTROLS SPECIFICATION

3 OPERATION OF CONTROL PANEL ON INDOOR UNIT

■ MANUAL OPERATION BUTTON

- Every press of this button will turn the system on or off.

(Cool only type)
Every time the switch is pressed, it changes in sequence of

COOL → STOP.

(Heat pump type)
Every time the switch is pressed, it changes in sequence of

COOL → HEAT → STOP.

MANUAL run operation procedure as the following:

Mode	Setting temperature	Fan speed	Deflector
COOL	24°C	High	Swing
HEAT	24°C	High	Swing

In the first 30 minutes operation, the compressor don't stop ,indoor fan hold high speed. After 30 minutes, emergency run operation start.

■ SYSTEM LED LIGHT

- When system is operating, the RUN light is on. When system is off, the light is off.
- When sleep mode is operating, the SLEEP light is on. When sleep mode is off, the light is off.
- When timer is operating, the TIME light is on. When time is over, the light is off.

■ SELF DIAGNOSIS FUNCTION

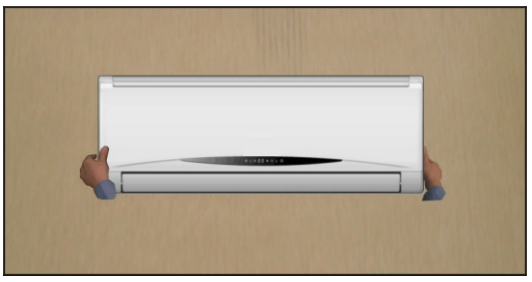
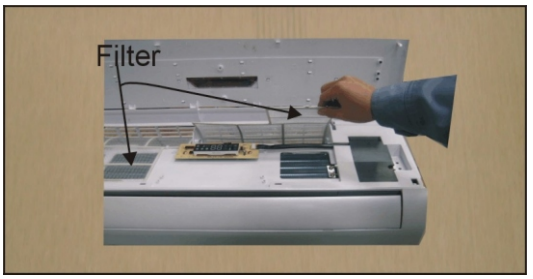
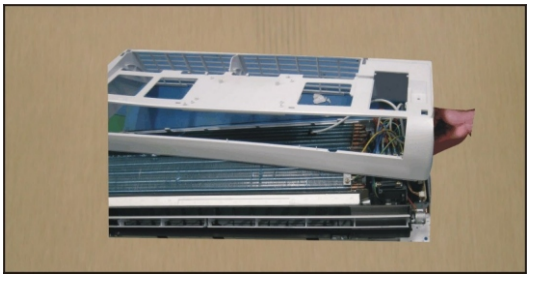
Our company provides the end-users with thoughtful services by installing various diagnostic systems to indicate the following irregular performances.

Check code	Diagnosis of malfunction
FAULT F6	PG motor faults
FAULT F7	Indoor TEMP sensor faults
FAULT F8	Indoor coil pipe TEMP sensor faults
FAULT F9	Outdoor coil pipe TEMP sensor faults

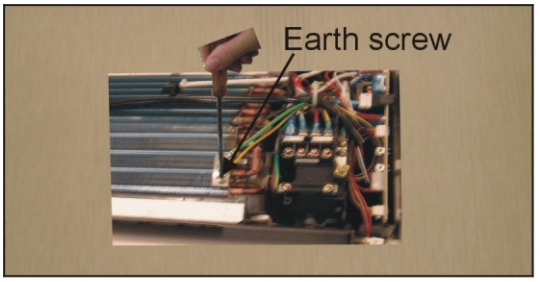
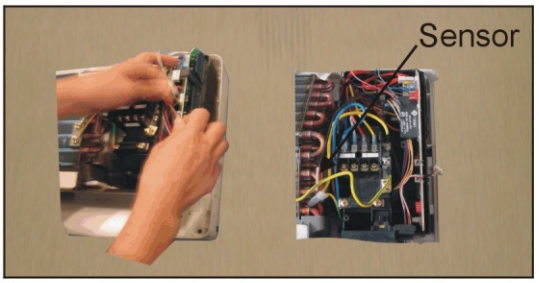
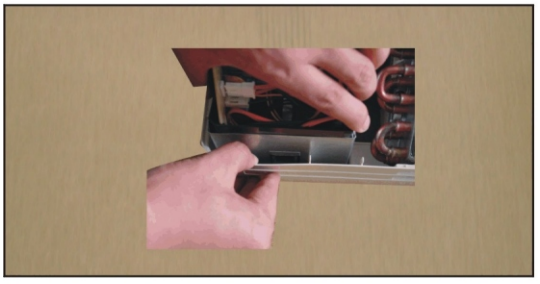
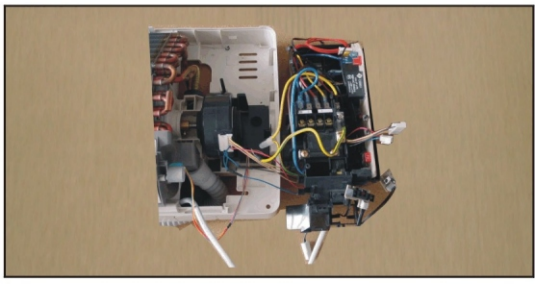
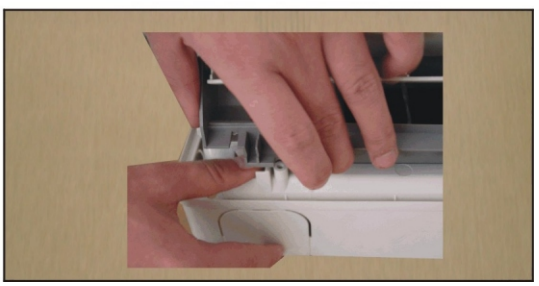
DISASSEMBLY AND REASSEMBLY

Stop operation of the air conditioner and remove the power cord before repairing the unit

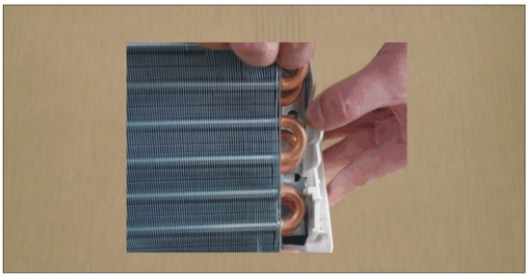
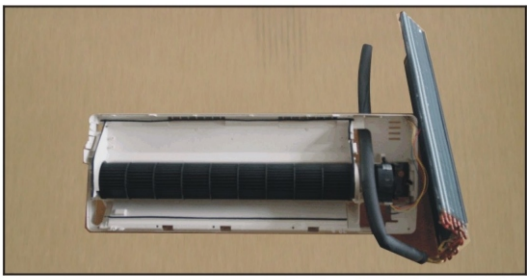
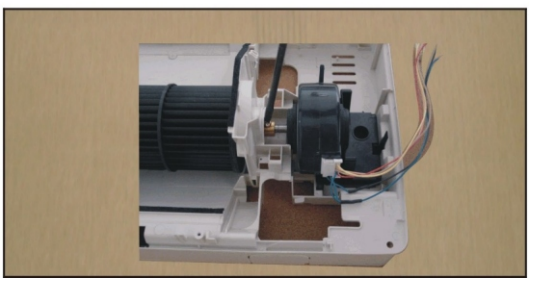
Indoor unit DSA-099L DSA-129L

No	Parts	Procedure	Remark
1	Front grille	1.Stop the air conditioner operation and block the main power. 2.Contract the second finger to the left ,and right handle and pull to open the inlet grille.	
		3.Draw away signal line.	
		4.Take the left and right filter out.	
		5. Loosen two fixing screw of front grille.	
		6.Put hands at the two ruts of the body, then pull the front panel out .	

DISASSEMBLY AND REASSEMBLY

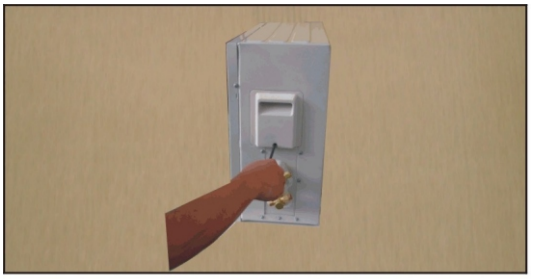
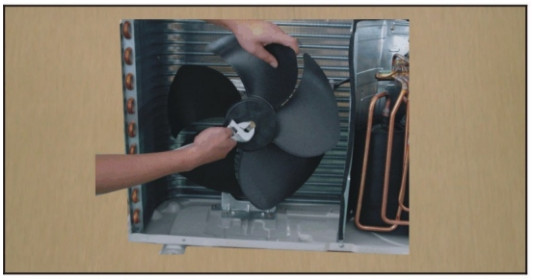
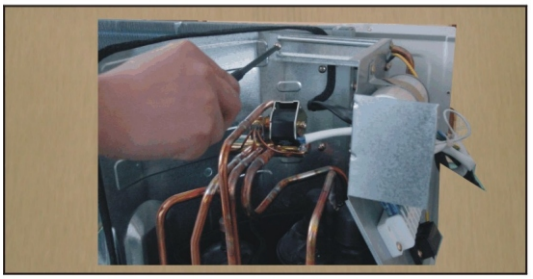
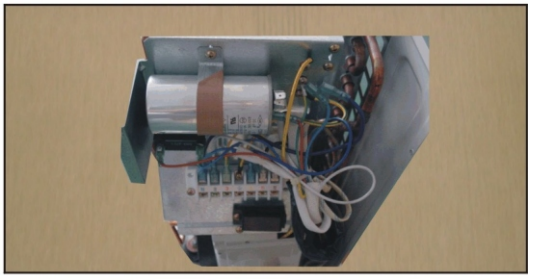
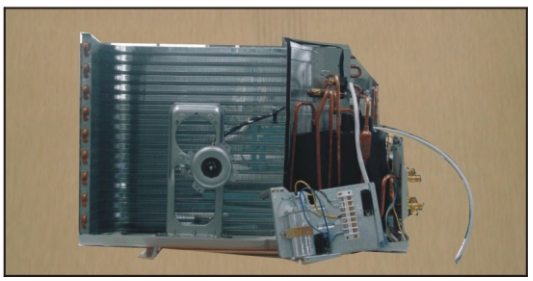
No	Parts	Procedure	Remark
2	Electrical parts	1.Loosen the earth screw in evaporator.	
		2.Loosen the stepping motor line, and pull softly the indoor pipe temperature sensor out from the pipe casing.	
		3.Push the hook outside to take the electrical box out easily.	
		4.Separate the electrical box from the indoor unit.	
3	Ass'y tray drain	1.Push the left and right hooks to make the ass'y pulled out.	

DISASSEMBLY AND REASSEMBLY

No	Parts	Procedure	Remark
		2.Separete the ass'y tray drain from the body.	
4	Evaporator	1.Push the left hook and separate the left part out of evaporator.	
		2.Push the right hook and separate the right part out of evaporator.	
		3.Separate the evaporator from the indoor unit.	
5	Fan motor and cross fan	1.Separate the fan motor from the fan.	

DISASSEMBLY AND REASSEMBLY

Outdoor unit DSA-099L DSA-129L

No	Parts	Procedure	Remark
1	Cabinet	1.Turn off the unit and remove the power cable. 2.Remove the upper cabinet, the front cabinet and back cabinet.	
2	Fan motor & propeller fan	1.Remove the nut flange. (Turn to the right to remove as it a left turned screw) 2.separate the propeller fan from fan motor. 3.Loosen the fixed screw of fan motor,separate the fan motor from outdoor unit	
3	Ass'y control out	1.Loosen the fixing screw of the base-electrical control . 2.separate the connector. 3.Separate the ass' y control out from the outdoor unit.	  

DISASSEMBLY AND REASSEMBLY

Outdoor unit DSA-189L

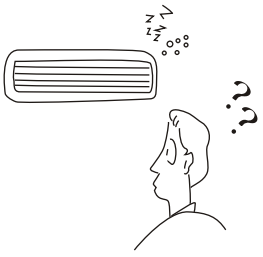
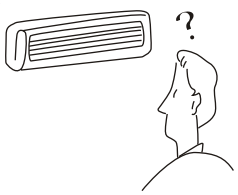
No	Parts	Procedure	Remark
1	Cabinet	1.Turn off the unit and remove the power cable. 2.Remove the upper cabinet, the front cabinet and back cabinet.	
2	Fan motor & propeller fan	1.Remove the nut flange. (Turn to the right to remove as it a left turned screw) 2.separate the propeller fan from fan motor. 3.Loosen the fixed screw of fan motor,separate the fan motor from outdoor unit	
3	Ass'y control out	1.Loosen the fixing screw of the base-electrical control .	

DISASSEMBLY AND REASSEMBLY

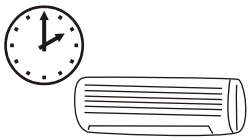
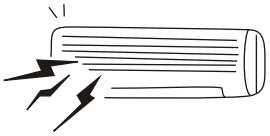
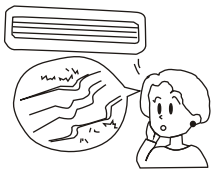
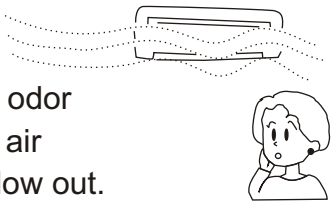
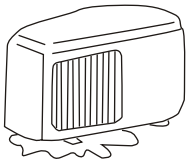
No	Parts	Procedure	Remark
		2.Loosen the nut flange on compressor.	
		3.Separate the connector.	
		4.Separate the ass' y control out from the outdoor unit.	

Troubleshooting

■ If problems can not be corrected after doing below items, please stop the air conditioner, contact our air conditioner specially engaged service centre nearest to you to get help.

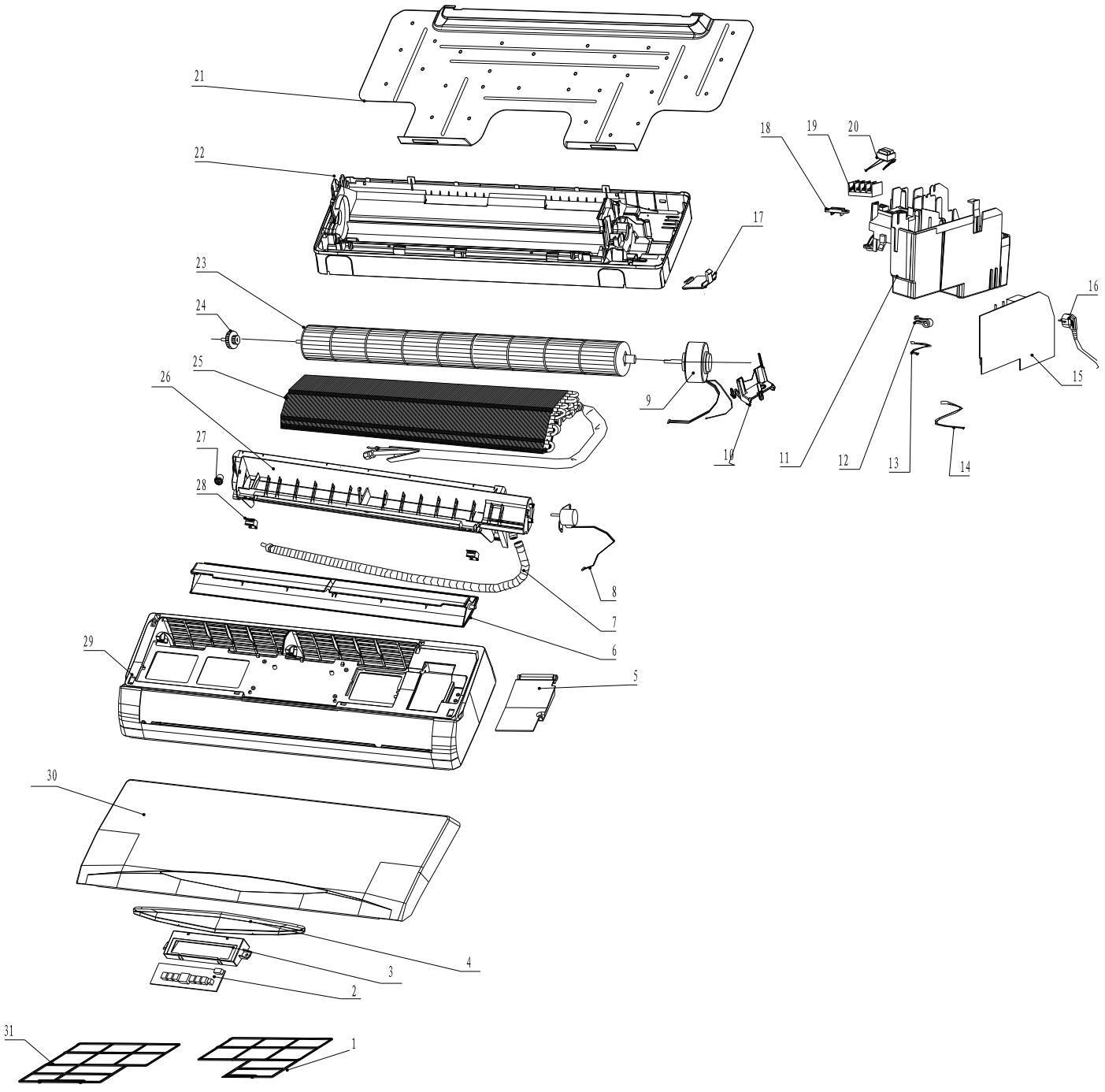
Is there a fault ?	Fault analysis
Air conditioner does not operate at all.	■ Does power fail ? Is plug out ? Does power fuse or switch off ? Is voltage higher than 253 V or lower than 207V? ■ Is time set suitable?
Remote controller is not available and does not display.	■ If disturbed abnormally or operation modes changed too frequently, sometimes the remote controller would lose function. Please plug out and plug in again, it may be ok. ■ If remote controller displays unclear or displays all symbols, please change batteries.
It is not running after I/O button is pressed. 	■ This is a way to protect compressor as per microprocessor instructions. Please wait 3 minutes.
Cooling and heating efficiency is not good.	■ Does temperature set suitably ? ■ Are filters dirty? ■ Are inlets and outlets of outdoor unit blocked? ■ Does sleep function start during daytime? ■ Does indoor fan speed set low ? ■ Are doors and windows closed ?
Air will not immediately blow out at the start of HEAT mode. 	■ It is processing information, air will only blow out when sufficiently warm. Please wait.

Troubleshooting

Is there a fault ?	Fault analysis
Indoor unit fan stops for about 10 minutes during heating. 	■ It is defrosting of the outdoor unit coil.It should complete this process in about 10 minutes at most.(It freezes when outdoor temperature is low and humidity is high.)
Issues cracking sounds 	■ The friction sounds caused by expansion and contraction of front panel resulting from temperature changes.
You can hear the sound of running water 	■ It is the sound of expanding refrigerant inside the air conditioner. ■ Sound of accumulated water dropping on the heat-exchanger. ■ Melting sounds of frost on heat-exchanger.
Indoor unit issue “pooosh” sound and click sound.	■ Click sound of fan or compressor when switching ON/OFF. ■ “pooosh” sound of refrigerant inside the air conditioner.
There is odd odor in the air that air conditioner blow out. 	■ Air conditioner recycles should have absorbed odors from wall, carpet , furniture and cloth closet out into the air.
Outdoor unit leaks water. 	■ During cooling, connecting pipe or pipe connector is cooled to form condensates. ■ During heating or defrosting , melting water and water vapor will run out. ■ During heating, water on heat-exchanger will drop.

Exploded Views and Parts List

Indoor unit DSA-099L DSA-129L



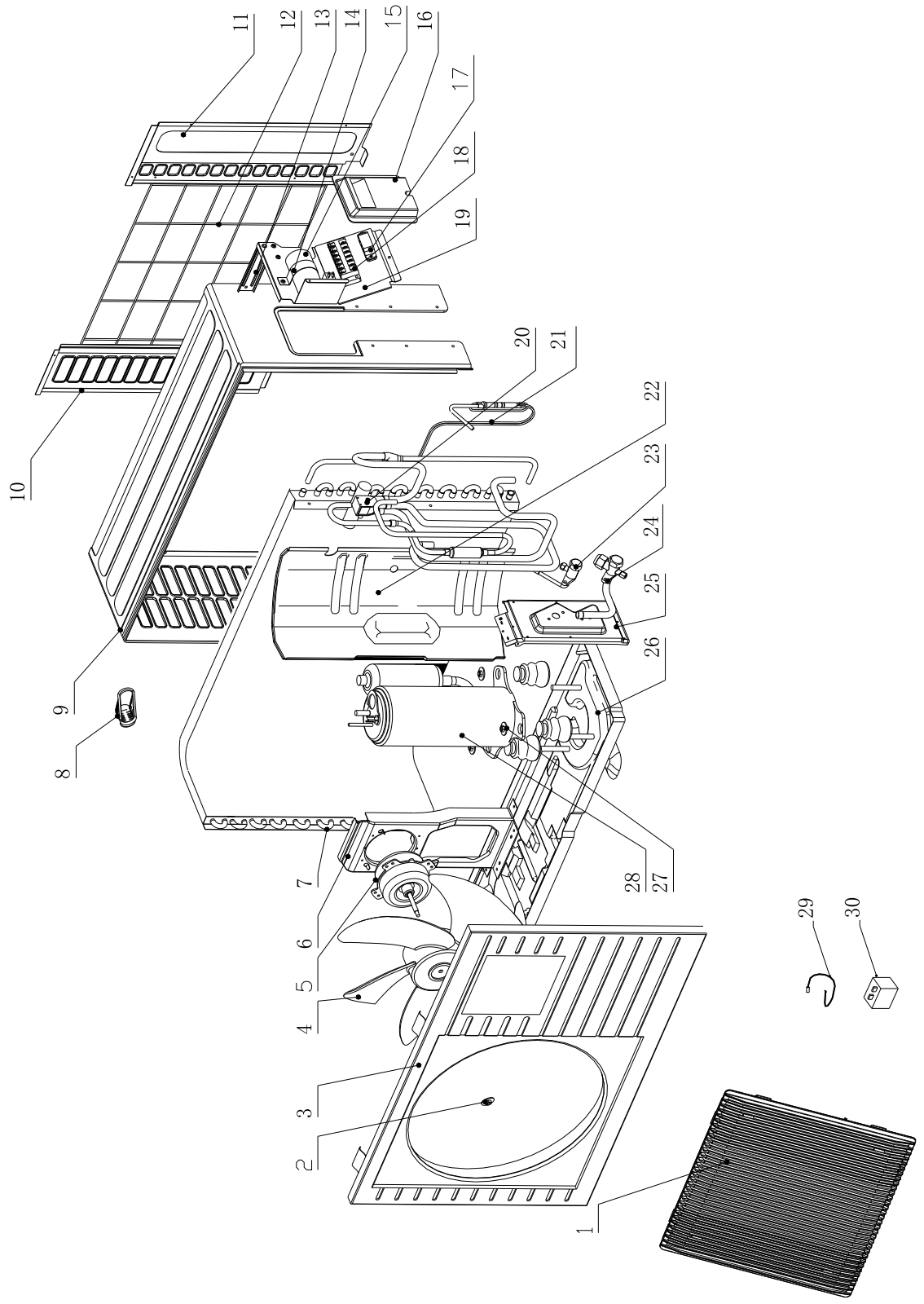
Exploded Views and Parts List

Indoor unit DSA-099L DSA-129L

No.	Part Name	Quantity	Item Code
1.	Right air filter	1	KFR25G.1.1.2-5(A1-GB40)
2	Display board	1	KFR32G.2.1-3(791)
3	Display control box cover	1	KFR32G.2.1-1(791)
4	Decoration board	1	KFR32G.1-2
5	Electrical control cover	1	KFR25G.1.1.2-2(A1-GB40)
6	Swing louver	1	KFR25G.1.3.2-1(A1-GB40)
7	Drain hose	1	SL07-01
8	Stepping motor	1	DQ04-03A
9	Indoor fan motor	1	DQ02-02B(PG)
10	Electrical holder	1	KFR33G.3.1-3
11	Electrical control box	1	KFR25G.3.1-1(A1-GB40)
12	Power supply cord clip	1	KFR33G.3.1-6
13	Room temperature sensor	1	DQ13-60
14	Pipe temperature sensor	1	DQ13-54
15	Control PCB assembly(PG)	1	KF25GC.3.2(A1-GB40)(PG)
16	Power supply cord	1	KFR25G.3.3.1(G1-2)C1.1
17	Pipe fixed clip	1	KFR33G.1.2-9
18	Connecting cable clip	1	KFR33G.3.1-7
19	ndoor unit terminal block	1	DQ12-51
20	Transformer	1	DQ16-24A
21	Mounting plate	1	KFR33G.9
22	Back panel	1	KFR33G.1.2-1
23	Indoor unit fan	1	KFR33G.7.2
24	Oil bearing	1	XJ04-01
25	Evaporator	1	KFR25G.2(G1-4)
26	Air outlet assembly	1	KFR25G.1.3(A1-GB40)
27	Drain cap	1	SL10-01
28	Screw cover	2	KFR33G.1.1.2-7
29	Enclosure	1	KFR25G.1.1.2-1(A1-GB40)
30	Front panel	1	KFR32G.1-1
31	Left air filter	1	KFR25G.1.1.2-4(A1-GB40)

Exploded Views and Parts List

Outdoor unit DSA-099L DSA-129L



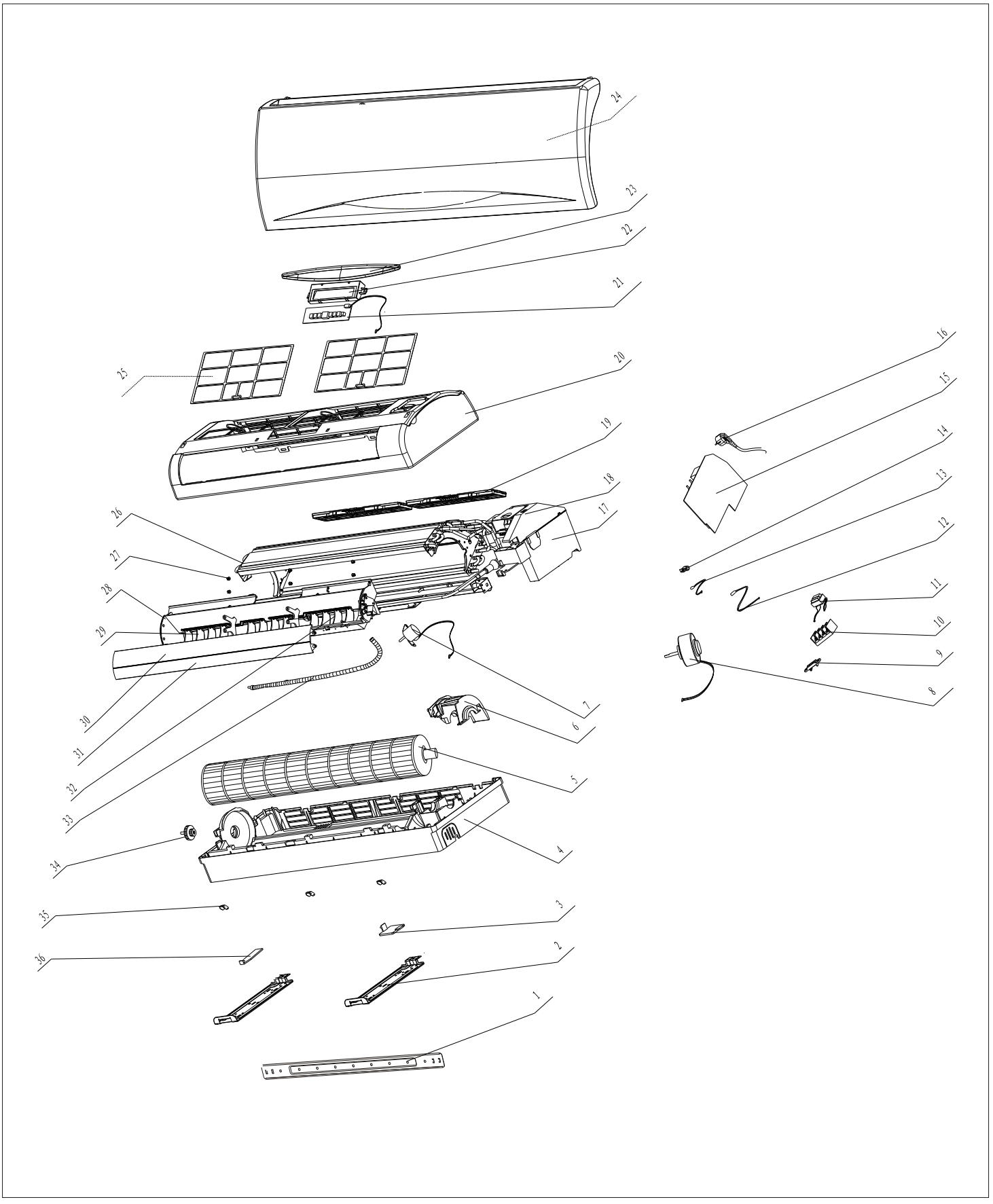
Exploded Views and Parts List

Outdoor unit DSA-099L DSA-129L

No.	Part Name	Quantity	Item Code
1.	Air outlet grille	1	KFR20W.1.1-2
2	Front panel	1	KFR20W.1.1-1
3	Left handle	1	SL05-01
4	Top panel	1	KFR20W.1.2-1
5	Fan screw nut M6 (left revolve)	1	GB41-86
6	Outdoor fan	1	KFR20W.1.5.1
7	Outdoor fan motor	1	DQ01-09B
8	Outdoor fan motor supporter	1	KFR20W.1.5-1
9	Condenser	1	KF23W.2.1A(A1-GB42)
10	right Left back side board	1	KFR20W.1.1-3
11	Electrical install board supporter	1	KFR20W.3.2-2
12	Left back side board	1	KFR20W.1.2-2
13	Back cover	1	KFR20W.1.2-9
14	right Left back side board	1	KFR20W.1.1-3
15	Electrical install board supporter	1	KFR33W.3.2-1
16	Capacitor fixer	1	BJ06-01
17	Outdoor unit terminal block	1	DQ12-11
18	power supply cord clip	1	SL01-04
19	Compressor capacitor	1	DQ11-57
20	Fan motor capacitor	1	DQ11-05
21	Capillary	1	AU-09C63F42a04.2.2
22	Capillary	1	AU-09C63F42a04.2.1
23	1/4 on-off valve	1	DG03-12
24	3/8 on-off valve	1	DG03-02
25	valve board	1	KFR35W.1.3-3
26	Compressor	1	AU-09C63F42a04.2.4.1
27	Inspiration pipe assembly	1	AU-09C63F42a04.2.3
28	Compressor screw	1	LD06-01
29	Back board	1	KFR25W.1.4C(G1-4)/6
30	Right handle	1	SL05-02

Exploded Views and Parts List

Indoor unit DSA-189L



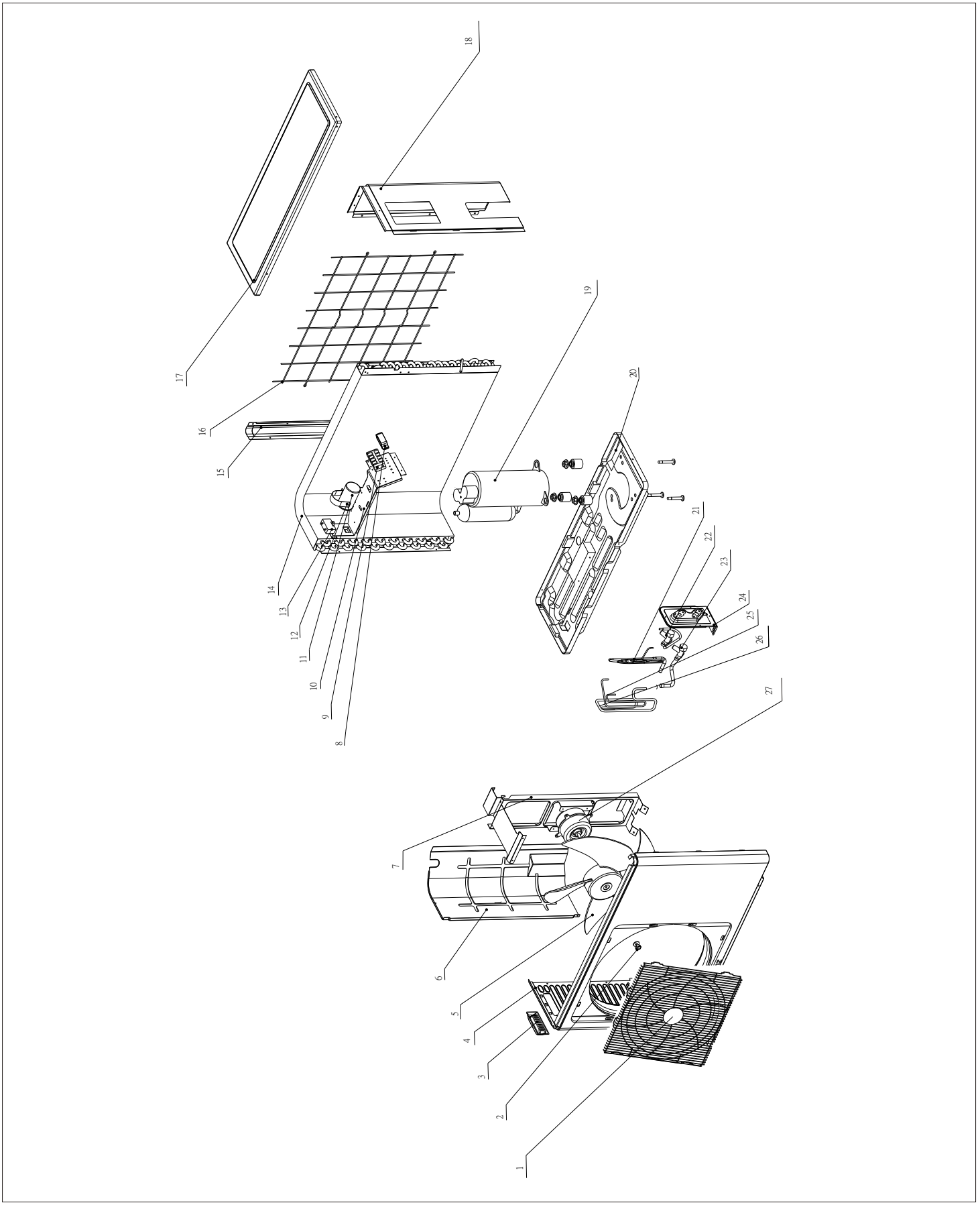
Exploded Views and Parts List

Indoor unit DSA-189L

No.	Part Name	Quantity	Item Code
1.	Connecting board of mounting plate	1	KFR36G.9-2(D9-130)
2	Mounting plate	2	KFR36G.9-1(D9-130)
3	Pipe fixing plate 1	1	KFR36G.8-2(D9-130)
4	Bottom shell	1	KFR36G.8-1(D9-130)
5	Indoor fan	1	KFR36G.7-2(D9-130)
6	Motor box cover	1	KFR36G.7-1(D9-130)
7	Stepping motor	1	DQ04-03A
8	Indoor fan motor	1	DQ02-17A
9	Cable fixing board	1	KFR33G.3.1-7
10	Indoor unit terminal block	1	DQ12-54
11	Transformer	1	DQ16-24A
12	Room coil pipe temperature sensor	1	DQ13-54
13	Room temperature sensor	1	DQ13-60.
14	Power supply cord clip	1	KFR51L.1.2-6（G1-4）
15	Control PCB assem bly	1	KF48G.3.1(D18-120)
16	Power supply cord	1	DQ05-102
17	Electrical apparatus box	1	KFR36G.3-1(D9-130)
18	Electrical apparatus box cover	2	KFR36G.3-2(D9-130)
19	Air filter holder	2	KFR36G.17-1(D9-130)
20	Panel body	1	KFR36G.2-1(D9-130)
21	display assembly	1	KF48G.2.1-3(D18-120)
22	Control box	1	KF48G.2.1-1(D18-120)
23	display assembly	1	KF48G.2.1-2(D18-120)
24	Panel	1	KF48G.1-1(D18-120)
25	Air filter	2	KFR36G.2.1(D9-130)
26	Evaporator	1	KFR36G.4(D9-130)
27	Deflector packing sleeve	6	KFR36G.6.3-3(D9-130)
28	Water collecting tray	1	KF25G.1-2(L1-130)
29	Left hand vertical vane	1	KF25G.2.1-2(L1-130)
30	Bottom deflector assembly		KFR36G.6.3-1(D9-130)
31	Upper deflector assembly		KFR36G.6.3-2(D9-130)
32	Right hand vertical vane	1	KFR36G.6.1(D9-130)
33	Drain hose assembly	1	SL07-01
34	Oil bearing	1	XJ04-01
35	Srew cover	3	KFR36G.2-2(D9-130)
36	Pipe fixing plate 2	1	KFR36G.8-3(D9-130)

Exploded Views and Parts List

Outdoor unit DSA-189L



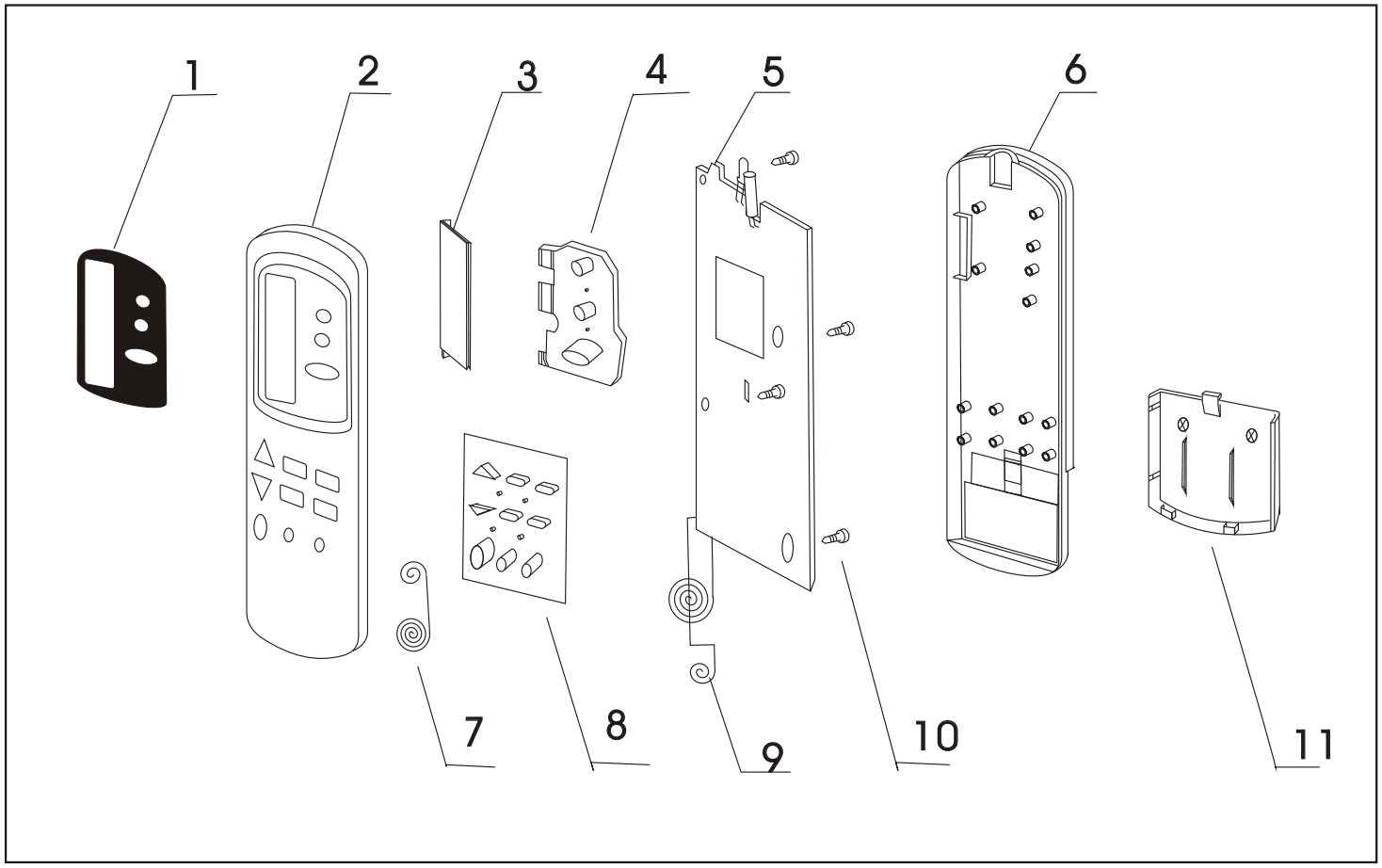
Exploded Views and Parts List

Outdoor unit DSA-189L

No.	Part Name	Quantity	Item Code
1.	Air outlet grille	1	KFR35W.1.2-3(G1-1)
2	Fan screw nut	1	LD06-04
3	Left handle	1	KFR35W.1.2-4(G1-1)
4	Front panel	1	KFR35W.1.2-1(G1-1)
5	Outdoor fan	1	LF51W.1.5.2(G1-5)
6	Partition	1	KFR35W.1.6-1(G1-1)
7	Outdoor fan motor supporter	1	KFR35W.1.5.1-1(G1-1)
8	Power supply cord clip	1	SL01-04
9	Outdoor unit terminal block	1	DQ12-12
10	Electrical install board supporter	1	KFR35W.3-1(G1-1)
11	Compressor capacitor	1	DQ11-53
12	capacitor fixer	1	BJ06-03
13	Fan motor capacitor	1	DQ11-06
14	Condenser	1	KF51W.8.1(779)
15	Left back side board	1	KFR35W.1.8(G1-1)
16	Back cover	1	KFR35W.1.7(G1-1)
17	Top panel	1	KFR35W.1.1-1(G1-1)
18	Right back side board	1	KFR35W.1.3-1
19	Compressor	1	SHZ73LC4-U
20	Back board	1	KFR35W.1.4-1(G1-1)
21	Capillary	1	KF50W.8.2(D9-120)(236)
22	1/4 on-off valve	1	DG03-12
23	1/2 on-off valve	1	DG03-06
24	valve board	1	KF25W.9.1(B1-130)
25	Discharge pipe	1	KF50W.9.1(D9-120)(236)
26	Counter-flow windpipe	1	KF50W.9.1-3(D9-120)(236)
27	Outdoor fan motor	1	DQ01-54B

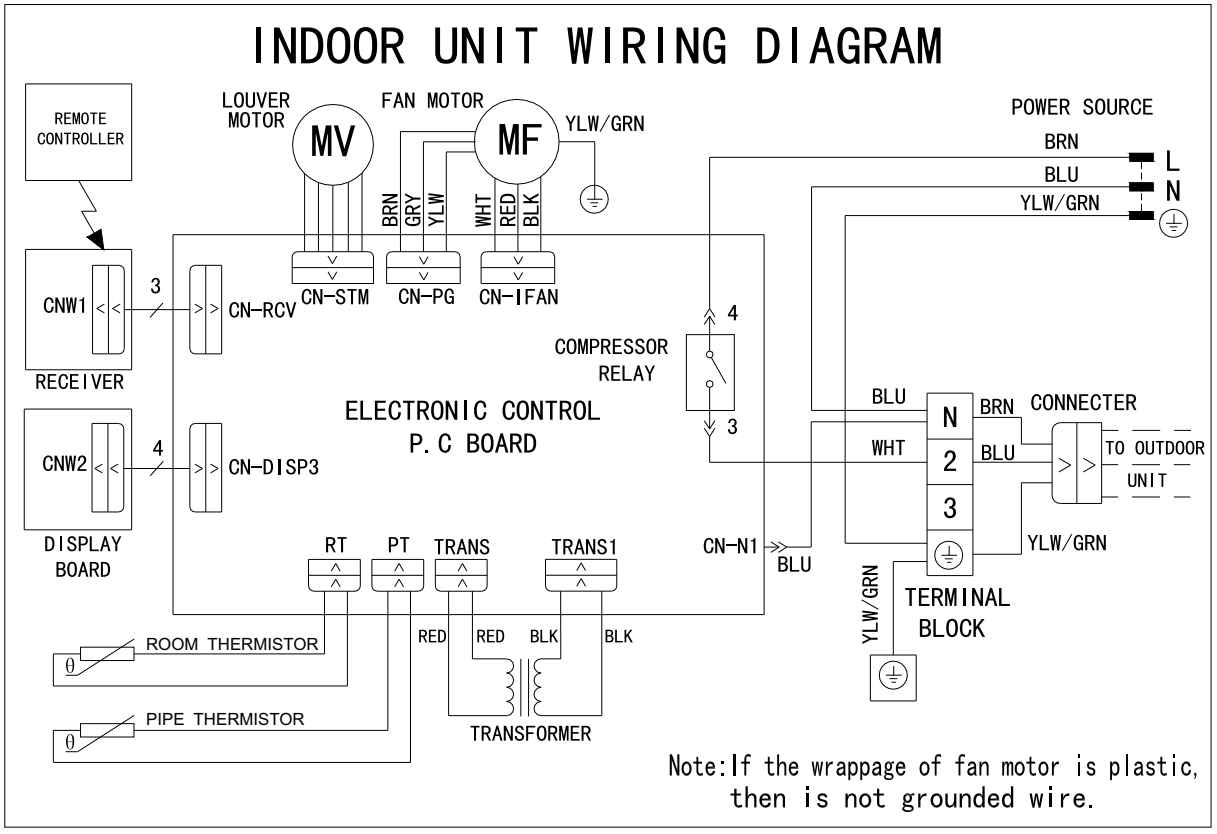
Exploded Views and Parts List

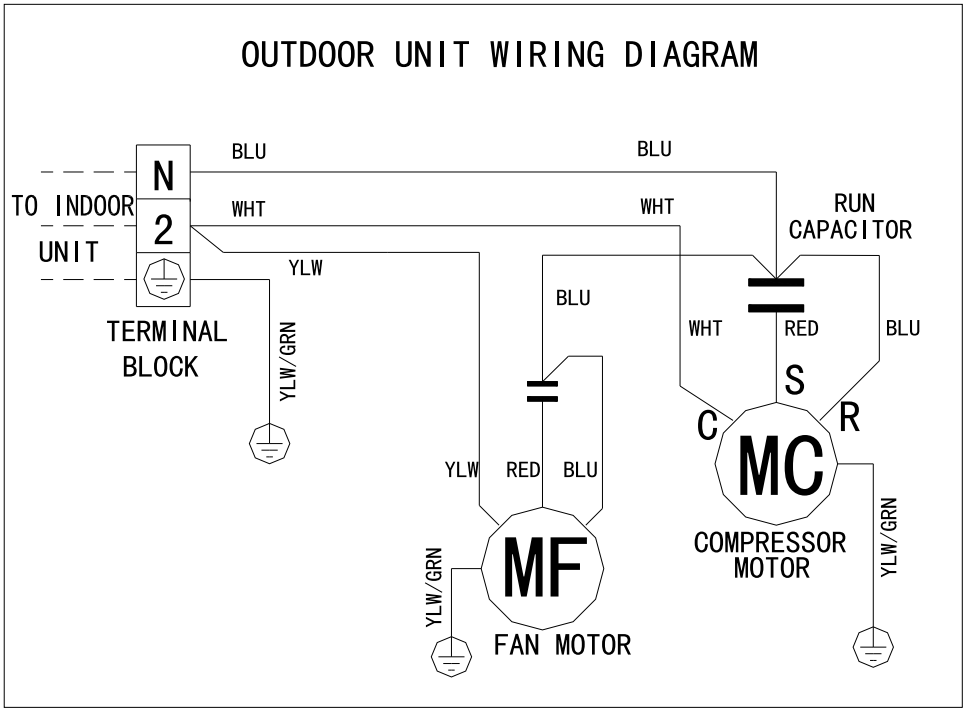
Remote controller



Number	Name	Quantity
1	Inlay LCD	1
2	case up	1
3	LCD screen	1
4	Conduct rubber	1
5	Ass'y PCB remocon	1
6	Back body	1
7	Spring battery	1
8	Conduct rubber	1
9	Spring battery	1
10	Screw	4
11	Back cover	1

Wiring diagram





Block diagram